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Group-Hx

Assignment: Classification using KNN

Classification using KNN on Iris dataset  
  
Tasks:  
    1. Load Iris dataset and split it into searching and testing dataset.  
    2. For 3-NN, 5-NN, 7-NN loop over testing data using searching dataset to predict the species.  
    3. Find the accuracy over the testing data for all the different models(3NN, 5NN, 7NN).

**Answer:**

from sklearn.datasets import load\_iris

from sklearn.model\_selection import train\_test\_split

from sklearn.neighbors import KNeighborsClassifier

from sklearn.metrics import accuracy\_score

# Load Iris dataset

iris = load\_iris()

# Split data into searching and testing datasets

X\_train, X\_test, y\_train, y\_test = train\_test\_split(iris.data, iris.target, test\_size=0.3, random\_state=42)

# Define different values of k for KNN

k\_values = [3, 5, 7]

# Loop over k\_values to train and predict using KNN

for k in k\_values:

knn = KNeighborsClassifier(n\_neighbors=k)

knn.fit(X\_train, y\_train)

y\_pred = knn.predict(X\_test)

acc = accuracy\_score(y\_test, y\_pred)

print(f"Accuracy for {k}-NN: {acc:.2f}")